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(12) UK Patent Application (19) GB (11) 2 134 791 A

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(21) Application No 8403619  
(22) Date of filing 10 Feb 1984  
(30) Priority data  
(31) 8303841  
(32) 11 Feb 1983  
(33) United Kingdom (GB)  
(43) Application published  
22 Aug 1984

(51) INT CL<sup>3</sup>  
A61L 15/03 A61K 33/00  
35/78

(52) Domestic classification  
A5R PD  
A5B 170 270 27Y 30X  
30Y J  
U1S 2410 A5B A5R

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(58) Field of search  
A5R  
A5B

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(54) **Antibacterial dressing**

(57) A surgical dressing comprises  
Sphagnum moss treated with an  
effective quantity of an antibacterial

agent comprising for example, one or  
more of metallic silver, gold,  
palladium, platinum and tin. A  
silver/carbon composite may also be  
used.

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## SPECIFICATION

### Antibacterial dressing

This invention relates to an antibacterial surgical dressing.

5 Sphagnum moss possesses a unique structure with leaves which contain wide, elongated cells having perforated walls. These cells provide a very high liquid absorptive capacity for the moss. A leaf may retain 20 to 25 times its own weight of  
10 water. The elongate cells are interconnected by short stalks, which facilitate ingress of liquid by capillary action. The cells are strengthened by spiral rings of resilient material which make the leaves elastic, this being a vital property for use in  
15 surgical dressings. Moss is also effective in wound healing since blood constituents are transmitted to adjacent leaf cells. In addition there is a concentration of leucocytes and the interface between the moss and the wound.

20 According to the present invention an antibacterial dressing comprises sphagnum moss treated with an effective quantity of an antibacterial agent.

In comparison to artificial fibres, moss has a  
25 vast inherent surface area. Very effective impregnation of moss with antibacterial agents may be achieved with thorough dissemination of the agent.

Particularly preferred antibacterial agents may  
30 comprise metallic silver, gold, palladium, platinum and tin or mixtures or composites containing these metals. Silver/carbon complexes may also be used. These may be applied by vacuum deposition or by sputtering onto dried specimens  
35 of the moss. Silver is especially preferred, this metal having been found to release silver ions at a sufficiently slow rate to be effective without risk of harming the patient. The slow release is believed to be facilitated by a galvanic interaction with the moss or with added metallic or  
40 non-metallic compounds.

The moss may comprise one or more species selected from: Sphagnum papillosum, Sphagnum  
45 palustre, Sphagnum magellanicum and Sphagnum imbricatum although alternative mosses may be used.

The moss is preferably crimped to break any large stalks prior to treatment with the bactericide. The moss may be mixed with other  
50 natural or man-made fibres to produce a composite dressing.

A discontinuous coating of metal has been found to be advantageous in that wound-healing properties of the moss are not inhibited.

55 The dressing has been found to be effective against both gram positive and gram negative bacteria.

The dressing may incorporate a membrane which is permeable to air and vapours but is  
60 impermeable to liquids.

Such a membrane facilitates oxygen transfer but does allow penetration of bacteria to the wound.

### Claims

- 65 1. An antibacterial surgical dressing comprising Sphagnum moss treated with an effective quantity of an antibacterial agent.
2. A dressing as claimed in claim 1, wherein the antibacterial agent is selected from: metallic  
70 silver, gold, palladium, platinum or tin or mixtures thereof.
3. A dressing as claimed in claim 1 or 2, comprising a silver/carbon composite material.
4. A dressing as claimed in claim 2, wherein  
75 the agent is applied to dried moss by vacuum disposition or by sputtering.
5. A dressing as claimed in any preceding claim, wherein the moss comprises one or more species selected from Sphagnum papillosum,  
80 Sphagnum palustre, Sphagnum magellanicum and Sphagnum imbricatum.
6. A dressing as claimed in any preceding claim, wherein the moss is crimped prior to treatment with the antibacterial agent.
- 85 7. A dressing as claimed in any preceding claim, further comprising a man made or natural fibre.
8. A dressing as claimed in any preceding claim, comprising a membrane which is  
90 permeable to air but impermeable to liquids.
9. A dressing substantially as hereinbefore described.